

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) Photodynamic therapy equipment for treating lesioned part by using a photosensitive substance, which is activated by a light having ~~a peak~~ an intensity of a predetermined range but is not activated by a light having the ~~peak~~ intensity out of the predetermined range, comprising:

~~an input means for being input a preserved distance which is determined based on depth and size of a deep-lying lesioned part;~~

an irradiation means irradiating into a body a pulsed light of a wavelength having the potential for activating the photosensitive substance; and

a control means ~~calculating a peak intensity of the light which can activate the photosensitive substance at the deep-lying lesioned part based on experimentally estimated relationship between the peak intensity of light and a therapeutic depth and the preserved distance, and controlling the peak intensity of the light, with or without changing an optical power,~~ irradiated by the irradiation means;

wherein said control means ~~controls the depth in the body, where the photosensitive substance is activated, in a position adjacent to the lesioned part by allowing the irradiation means to irradiate the light having a high peak intensity in order that the light arriving at the deep-lying lesioned part is to achieve the peak intensity of the predetermined range, and controls not to activate the photosensitive substance in a superficial part of the body positioned closer to the light irradiation means than the lesioned part~~ is input a depth information of a lesioned part and sets up the light irradiating intensity based on the depth information so that the pulsed light is allowed to pass with maintaining a high intensity for not to activate the photosensitive substance through the healthy superficial part, which is shallower than the lesioned part, and the pulsed light reached to the lesion at the level of attenuated light intensity in order to exhibit the intensity to exactly activate the photosensitive substance in the lesioned part controls.

2. (Original) The photodynamic therapy equipment according to claim 1 wherein the control means further controls the repetition frequency of the light irradiated by the irradiation means.

3. (Currently Amended) The photodynamic therapy equipment according to claim 1, wherein the light having the high ~~peak~~-intensity has the peak intensity ranging from 10 kW/cm^2 to 10 MW/cm^2 which is below a threshold value generating the plasma in the surface of the body by the light pulse irradiation, and a repetition frequency is 1 Hz to 1 kHz.

4. (Canceled).

5. (Previously Presented) The photodynamic therapy equipment according to claim 1 comprising further a detection means detecting at least one of an amount of the photosensitive substance accumulated in the lesioned part and oxygen concentration of the lesioned part.

6. (Previously Presented) The photodynamic therapy equipment according to claim 1, wherein the light is selected from the group consisting of light generated from optical parametric oscillator, semiconductor laser beam, dye laser radiation and second harmonic waves of variable wavelength near-infrared laser beam.

7. (Previously Presented) The photodynamic therapy equipment according to claim 1 comprising further a catheter inserting into the position adjacent to the lesioned part in the body and guiding the light irradiation means to the position adjacent to the lesioned part by a guidance of the catheter.

8. (Previously Presented) The photodynamic therapy equipment according to

claim 7 wherein the catheter is a vascular balloon catheter.

9. (Previously Presented) The photodynamic therapy equipment according to claim 7 wherein the catheter is an urethral catheter.

10. (Previously Presented) The photodynamic therapy equipment according to claim 1 wherein the control means controls the depth in the body, where the photosensitive substance is activated, not by changing the total number of pulse of the light irradiated from the light irradiation means, but by controlling the peak intensity of the light.

11. (Previously Presented) The photodynamic therapy equipment according to claim 1 wherein the control means controls the depth in the body, where the photosensitive substance is activated, by keeping the total irradiation energy of the light irradiated from the light irradiation means constant, and controlling the peak intensity of the light.

12. (Previously Presented) The photodynamic therapy equipment according to claim 1 wherein the control means controls the area in the body, where the photosensitive substance is activated, by changing continuously or intermittently the peak intensity of the light irradiated from the light irradiation means.

13. (Currently Amended) A method for controlling the photodynamic therapy equipment equipped with an irradiation means irradiating into a body a pulsed light of the wavelength having the potential for activating a photosensitive substance, which is activated by a light having ~~a peak an~~ intensity of a predetermined range but is not activated by a light having ~~the peak an~~ intensity out of the predetermined range, and a control means controlling the peak intensity of the light from the irradiation means, comprising:

inputting ~~a preserved distance which is determined based on depth and size of a deep-lying lesioned part~~ depth information of a lesioned part to the control means;

setting up the light irradiating intensity, with or without changing an optical power, by the control means, based on the depth information so that the pulsed light is allowed to pass with maintaining a high intensity for not to activate the photosensitive substance through the healthy superficial part, which is shallower than the lesioned part, and the pulsed light reached to the lesioned part at the level of attenuated light intensity in order to exhibit the intensity to exactly activate the photosensitive substance in the lesioned part

~~calculating a peak intensity of the light which can activate the photosensitive substance at a deep-lying lesioned part based on experimentally estimated relationship between the peak intensity of light and a therapeutic depth and the preserved distance; and~~

~~controlling the depth in the body, where the photosensitive substance is activated, in the position adjacent to the lesioned part by allowing the irradiation means to irradiate the light having the high peak intensity in order that the light arriving at the deep-lying lesioned part is to achieve the peak intensity of the predetermined range, and controlling not to activate the photosensitive substance in the superficial part of the body located closer to the light irradiation means than the lesioned part.~~

14. (Original) The method for controlling the photodynamic therapy equipment according to claim 13 wherein the control means further controls the repetition frequency of the light irradiated from the irradiation means.

15. (Previously Presented) The method for controlling the photodynamic therapy equipment according claim 13 comprising detecting at least one of an amount of the photosensitive substance in the area adjacent to the lesioned part and oxygen concentration of the lesioned part, and controlling the peak intensity of the light irradiated from the irradiation means by the control means based on a result of detection.

16. (Canceled).

17. (Currently Amended) Photodynamic therapy equipment comprising:

an irradiation means irradiating a pulsed light of a wavelength having the potential for activating a photosensitive substance, which is activated by the light having a ~~peak~~ an intensity of a predetermined range but is not activated by the light having the ~~peak~~ intensity out of the predetermined range, and

a control means ~~calculating an irradiation condition of the light based on an experimentally estimated relationship between rate of cell death and depth in each pulse energy density, and~~ controlling the irradiation condition of the light irradiated from the irradiation means,

wherein said control means is input a depth information of a lesioned part and sets up the light irradiating intensity, with or without changing an optical power, based on the depth information so that the pulsed light is allowed to pass with maintaining a high intensity for not to activate the photosensitive substance through the healthy superficial part, which is shallower than the lesioned part, and the pulsed light reached to the lesioned part at the level of attenuated light intensity in order to exhibit the intensity to exactly activate the photosensitive substance in the lesioned part, and

~~wherein~~ the control means controls the activation of the photosensitive substance by changing a irradiation condition of the light, as a result a rate of cell death damaged by an action of the activated photosensitive substance in a direction of the depth in the body is changed.

18. (Previously Presented) The photodynamic therapy equipment according to claim 17 wherein the irradiation condition of the light includes at least one of the peak intensity, wavelength, total irradiation time, total number of a irradiation pulse, total irradiation energy, pulse width and repetition frequency of the light.

19-21. (Canceled) .

22. (Previously Presented) The photodynamic therapy equipment according to claim 17 wherein the control means controls the irradiation condition of the light to control a

range of the cell fatality rate in order that the rate of cell death is maintained to above the cell fatality rate.

23. (Previously Presented) The photodynamic therapy equipment according to claim 17 wherein the control means controls the peak intensity of the light while keeping the total number of the irradiation pulse of the light irradiated from the light irradiation means constant to control the range of the cell fatality rate.

24. (Previously Presented) The photodynamic therapy equipment according to claim 17 wherein the control means controls the peak intensity of the light while keeping the total irradiation energy of the light irradiated from the light irradiation means constant to control the range of the cell fatality rate.

25. (Previously Presented) The photodynamic therapy equipment according to claim 17 wherein the control means changes continuously or intermittently the peak intensity of the light irradiated by the light irradiation means to control the range of the cell fatality rate.

26. (Currently Amended) The photodynamic therapy equipment according to claim 17 further comprising ~~further a catheter inserted into the position adjacent to the lesioned part in the body, and guiding the light irradiation means to the position adjacent to the lesioned part by a guidance of the catheter.~~

27. (Previously Presented) The photodynamic therapy equipment according to claim 26 wherein the catheter is a vascular balloon catheter.

28. (Previously Presented) The photodynamic therapy equipment according to claim 26 wherein the catheter is an urethral catheter.

29. (Currently Amended) A method of photodynamic therapy comprising:

a step administering to a body a photosensitive substance, which is activated by a light having ~~a peak~~an intensity of a predetermined range but is not activated by a light having ~~the peak~~an intensity out of the predetermined range;

a step inputting a ~~preserved distance which is determined based on depth and size of a deep-lying lesioned part~~depth information of a lesioned part;

a step ~~calculating a peak intensity of the light which can activate the photosensitive substance at a deep-lying lesioned part based on experimentally estimated relationship between the peak intensity of light and a therapeutic depth~~setting up the light irradiating intensity, with or without changing a light quantity, based on depth information so that the pulsed light is allowed to pass with maintaining a high intensity for not to activate the photosensitive substance through the healthy superficial part, which is shallower than the lesioned part, and the pulsed light reached to the lesioned part at the level of attenuated light intensity in order to exhibit the intensity to exactly activate the photosensitive substance in the lesioned part;

a step irradiating into the body a pulsed light of a wavelength having the potential for activating the photosensitive substance accumulated in ~~a deep~~the lesioned part of the body by the administration of the photosensitive substance; and

a step activating the photosensitive substance in the lesioned part by an action of the light having the ~~calculated peak~~set intensity within the predetermined range by irradiating the light of the high ~~peak~~ intensity when the pulsed light is irradiated, subjecting to damage the lesioned part by an action of the activated photosensitive substance, simultaneously subjecting not to activate the photosensitive substance in the superficial part shallower than the lesioned part, and preserving the superficial part.

30. (Original) The method of photodynamic therapy according to claim 29 wherein the photosensitive substance is supplied by the systemic administration or the local administration to the body including the lesioned part in the step of administering the photosensitive substance in the body.